

**WHAT IS CLAIMED IS:**

1. A powerchute comprising:

- a body having an outer shell and an inner reinforcement, the outer shell including a nose, opposing side panels, a roll bar and a powerplant shelf, wherein a plurality of the nose, opposing side panels, roll bar and powerplant shelf define a cavity including a cabin, and wherein the outer shell and the inner reinforcement comprise a carbon fiber composite which is of sufficient strength to maintain rigidity and structural integrity without the use of metal support members.

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2. The powerchute of claim 1 wherein the outer shell and the inner reinforcement are secured together by way of an epoxy.

15 3. The powerchute of claim 1 wherein at least one of the outer shell and the inner reinforcement further comprises a yaw control rail.

4. The powerchute of claim 3 wherein the yaw control rail further comprises a channel extending along the body.

20 5. The powerchute of claim 4 wherein the channel includes opposing side surfaces and a top.

6. The powerchute of claim 4 wherein the cross-sectional area of the channel at any point of along the length thereof is substantially uniform.

7. The powerchute of claim 3 wherein the vehicle further includes a powerplant assembly 5 having an engine and a propeller coupled therewith, the engine coupled with the powerplant shelf, the propeller positioned such that the propeller passes beyond a region proximate yaw control rail during a rotation thereof.

8. The powerchute of claim 1 further comprising a front landing gear and a rear landing 10 gear, the rear landing gear comprising:

- a torsional suspension component;
- opposing trailing arms extending outwardly and downwardly away from the torsional suspension component;
- opposing axles associated with each opposing trailing arm proximate a far end thereof;

15 and

- opposing wheels associated with each of the opposing axles.

9. The powerchute of claim 8 wherein the opposing trailing arms initiate in a substantially 20 outward horizontal configuration proximate the torsional suspension component and terminate proximate the opposing axles in a substantially vertical orientation.

10. The powerchute of claim 10 wherein opposing trailing arms comprise substantially uniformly tubular components.

5 11. The powerchute of claim 1 further comprising a chute attachment assembly, the chute attachment assembly comprising opposing arms mounted to opposing body mounts, the opposing arms including plates which extend on either side of the respective body mount and secure the body mount between the plates.

10 12. The powerchute of claim 11 wherein the opposing arms are connected to each other within the cavity defined by the outer shell.

15 13. The powerchute of claim 12 wherein the opposing arms are each secured to opposing side panels by way of a cable.

14. The powerchute of claim 11 wherein the opposing body mounts further comprising a core and opposing carbon fiber composite panels substantially encapsulating the core.

15. The powerchute of claim 14 wherein the core comprises a wood material.

20 16. The powerchute of claim 1 further comprising a canopy over at least a portion of the cabin, at least a portion of the canopy being transparent.